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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,982	10/30/2001	Robert Varney		6027

7590
Legal Department
Teradyne, Inc.
321 Harrison Avenue
Boston, MA 02118

07/08/2003

EXAMINER

DIMYAN, MAGID Y

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,982

Applicant(s)

VARNEY, ROBERT

Examiner

Magid Y Dimyan

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

DETAILED ACTION

Acknowledgement

1. Receipt is acknowledged of the Preliminary Amendment, filed March 14, 2003. It is also acknowledged that the Applicant has cancelled claims 1 – 23, and added new claims 24 – 54.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 24 – 27, 29 – 31, 35, 37 – 44, 46 – 52 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al (henceforth, Smith) - U.S. Patent No. 6,185,707.

4. Referring to claims 24, 35, 51 and 52, Smith discloses a DFT result diagnosis method and system as claimed herein, that includes (a) an ATE data source; (b) an ATPG tool to generate ATPG pattern data; (c) at least one translation module; and (d) means to summarize test result data. See Figs. 11, 12; column 3, lines 1 – 12.

5. As per claim 25, see Fig. 12; column 1, lines 11 – 43, which cite using a semiconductor tester, as claimed.

6. As per claims 26 and 27, see Figs. 11 and 12, which show the ATE data source, as well as the translation modules and mapping generator as claimed herein.

7. Referring to claim 29, see Figs. 11 and 12; column 6, lines 6 – 16, which teach how to provide the data source and the output data results from the tester as claimed.

8. As per claims 30 and 31, see column 4, line 66 to column 5, line 40; Fig. 12, which cite how ATE failure data, scan failure data and test vectors (i.e., logical failure data and physical design failure data) are used in DFT diagnosis, as claimed herein.

9. As per claims 37 and 38, see above, as well as the Abstract, which recite how the X-Y coordinates of a failed net (i.e., scan chain failure) can be identified and displayed, so that they can be diagnosed, as claimed herein.

10. Referring to claims 39 – 43, see above; Fig. 12; and the Abstract, which teach the steps of device testing as claimed herein.

11. As per claims 44, 46 and 47, see column 4, lines 61 – 65; Fig. 3, which show how scan failures are displayed as claimed.

12. As per claim 48, see Column 6, lines 29 – 44, which recite how selected scan failures can be used in the diagnosis of circuits.

13. As per claim 49, see above, as well as Fig 12, which teach the generation of ATPG patterns and the required data translations, as claimed herein.

14. Referring to claim 50, see above as well as Fig. 12, which cite how diagnosis results data are accumulated, as claimed.

15. As per claim 54, see (8) above as well as Figs. 11 and 12, which cite the method of accessing test data and summarizing the test data as claimed herein.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 28, 32 – 34, 36 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Testa et al (U.S. Patent No. 6,205,407).

18. Referring to claims 28, 32 – 34, 36 and 45, the teachings of Smith are described above as well as in the disclosure. However, Smith does not teach the use of a Graphical User Interface (GUI) in the diagnosis and testing invention cited above. Testa et al, on the other hand, disclose a system and method for generating test code for testing an electronic device on an ATE platform that include translating scan and pattern data into test code, and furthermore cite the use of a GUI in their invention (see Abstract; Summary of Invention, column 2, lines 25 – 56). Since using a GUI and other graphics would greatly facilitate and enhance the scan diagnosis process of a device under test, it would therefore be obvious to one having ordinary skill in the art at the time of the invention to combine the teachings of Smith and Testa et al to obtain the same inventions as claimed herein.

19. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Mangat et al (U.S. Patent No. 6,081,814). As cited above, Smith discloses methodologies for scan testing and diagnosis that includes summarizing translated test result data for devices under test. However, Smith does not teach filtering, sorting, querying or accumulating test data as claimed herein. However, Mangat et al have disclosed a reference environment manager system that can create, modify, and access multiple environments (i.e., data) each containing certain references related in a manner of significance to a user (see Abstract). Furthermore, Mangat et al teach how to sort, filter, query and accumulate data as warranted (see Fig. 5; column 16, lines 38 – 46). Since the steps of filtering, sorting, querying and accumulating test data will speed up the diagnosis of a device under test (because of the usually very large test results database for complex devices), it would therefore be obvious to one having ordinary skill in the art at the time of the invention to combine the teachings of Smith and Mangat to obtain the same invention as claimed.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,067,652 to Fusco et al discloses a system and method for translating software to convert non-tester-compatible simulation results into tester-compatible test patterns in an ATE system.

U.S. Patent No. 5,845,234 to Testa et al cites a system and method for efficiently generating test program code for testing an electronic device on an ATE platform connected to a testing workstation.

U.S. Patent No. 6,453,437 to Kapur et al teaches a method and system for performing transition fault simulation along long circuit paths for testing an IC using an ATE platform and an ATPG process.

Pub. No. US 2002/0010560 to Balachandran recites an improved method for mapping logical function test data of an IC to physical representations using a pruned diagnostic list.

U.S. Patent No. 5,974,248 to Graef discloses a method for comparing intermediate test files received from an ATPG tool and having different file formats and used to test ICs. The intermediate test files are converted to files having common formats.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y Dimyan whose telephone number is (703) 308-1354. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Magid Y Dimyan
Examiner
Art Unit 2825

myd
June 26, 2003



MATTHEW SMITH
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